



# PRODUCT BROCHURE

Pre-engineered steel buildings | MaxSEAM® roof system | Structural steel







### VISION

To be the world's most reliable and innovative manufacturer, and the premier service and solution provider in the steel building industry.

### MISSION

To supply high-quality steel buildings and structures, providing related services and solutions to a worldwide client base while utilizing innovative technologies within an environment of motivated employees, focused on continuous improvement, highest business standards, work ethics and corporate citizenship, leading to added value for our customers and sustained return on investment to our shareholders.



### COMPANY OVERVIEW

### THE PRODUCTS

THE PRE-ENGINEERED STEEL BUILDINGS SYSTEM  
MaxSEAM® - THE ULTIMATE ROOF SYSTEM  
STRUCTURAL STEEL

### EXAMPLES OF MAJOR PROJECTS



# COMPANY OVERVIEW



## GENERAL INTRODUCTION

Established in 1977, the Zamil Steel brand has gained a reputation for excellence in the design, manufacture, and supply of steel structure products, process equipment, transmission and telecommunications towers, open web steel joists, and roof & floor steel decks. It is a proud member of the Zamil Industrial Investment Company (ZIIC), which was founded by the esteemed Zamil Group. With a history spanning over 102 years, the Zamil Group Holding has emerged as one of the largest investment groups in Saudi Arabia, with its headquarters located in Al Khobar. The group operates across multiple industries globally, and is renowned for the quality of its services.

Zamil Steel Buildings Vietnam Co., Ltd was founded in 1997 as the leading supplier of steel structures, with 100% investment from Saudi Arabia. The company specializes in designing, fabricating, and erecting steel buildings for various sectors, such as industrial, commercial, institutional and so on. With a supportive network of sales offices in Vietnam, Thailand, Philippines, Myanmar, Malaysia, Laos, Indonesia, Cambodia and Bangladesh, Zamil Steel Buildings Vietnam leads in manufacturing pre-engineered steel buildings and structures in the Asia-Pacific region, with two state-of-the-art manufacturing facilities in Vietnam.

Zamil Steel Buildings Vietnam serves the dynamic markets of Vietnam and Asia-Pacific, headquartered in a unique position in the capital city of Hanoi, Vietnam. The company has grown sustainably and successfully by consistently delivering superior quality steel buildings and structures for nearly three decades in this region, owing to its customized, complete solutions, longstanding engineering expertise, and manufacturing excellence.

- **Date of establishment:** 27 June 1997
- **Company type:** 100% FDI
- **Brand origin:** Saudi Arabia
- **No. of employees:** more than 1000

## COMPANY OVERVIEW

### NORTH VIETNAM - HANOI PLANT

Located in Noi Bai Industrial Zone, Hanoi, Vietnam



Constructed in 1997, this plant specializes in the fabrication of pre-engineered steel buildings and heavy structural steel products.

**Total Area:** 41,200 m<sup>2</sup>

**Fabrication Capacity:**  
4,000 metric tons (MT) per month

### SOUTH VIETNAM - DONG NAI PLANT

Located in Amata Industrial Zone, Dong Nai, Vietnam



Inaugurated in 2008, this new plant possesses the most up-to-date cutting-edge technologies and modern machinery for the fabrication of pre-engineered buildings and complex steel structures.

**Total Area:** 45,150 m<sup>2</sup>

**Fabrication Capacity:**  
4,500 metric tons (MT) per month



**47+**  
years of experience

**90,000+**  
projects worldwide

**7,000+**  
projects all over Asia – Pacific region

**13**  
sales offices in ASEAN countries

# ZAMIL STEEL GLOBAL NETWORK

## FACTORIES & ENGINEERING OFFICES

**Eleven factories in**

- Hanoi, Vietnam (1 plant)
- Dong Nai, Vietnam (1 plant)
- Dammam, Saudi Arabia (5 plants)
- 6<sup>th</sup> of October, Egypt (1 plant)
- Sadat, Egypt (1 plant)
- Pune, India (1 plant)
- Ras Al-Khaimah, UAE (1 plant)

**Eight Engineering Offices worldwide**

- Hanoi, Vietnam
- Ho Chi Minh City, Vietnam
- Alexandria, Egypt
- Cairo, Egypt
- Chennai, India
- Dammam, Saudi Arabia
- Kochi, India
- Pune, India

## SOUTHEAST ASIA SALES NETWORK

**Vietnam Region:** Da Nang • Ha Noi • Hai Phong • Ho Chi Minh  
**Export Region:** Bangladesh • Cambodia • Indonesia • Laos • Malaysia • Myanmar • Philippines • Thailand  
 And 51 Representative Offices across Asia, Africa, Europe and Middle East



# CERTIFICATES



ISO 3834-2:2021



ISO-9001



ISO-14001



ISO-45001



Investment License



Construction Operation Qualification Certificate (Vietnam)



CIDB



AISC







# PEOPLE - CORE VALUES



## Zamil Steel Vietnam manpower (as of March 2024)

Total staff and workers:	1057
Management Team:	50
Engineering Team:	85
Quality Control Team:	35
Functional Departments:	220
Workers:	667

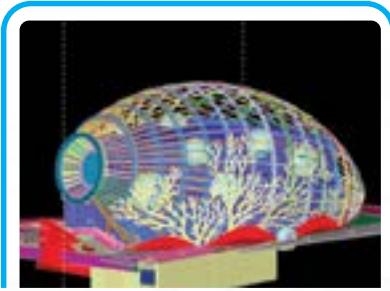




# MANUFACTURING CAPABILITIES







  
**DESIGN**



  
**QUOTE**




  
**DETAIL**



  
**PROJECT HANDOVER**



  
**ERECTION**



  
**PRODUCTION**

# WORKFLOW



# ENGINEERING EXPERTISE

## ENGINEERING CODES

Unless otherwise required by local conditions, all of our steel buildings and steel structures are designed and manufactured in accordance with the latest editions of the following codes:

- **Low Rise Building Systems Manual**  
Metal Building Manufacturer's Association, Inc. (MBMA)
- **Manual of Steel Construction Allowable Stress Design**  
American Institute of Steel Construction, Inc. (AISC)
- **Cold Formed Steel Design Manual**  
American Iron and Steel Institute (AISI)
- **Structural Welding Code-Steel Manual**  
American Welding Society (AWS)
- **Minimum Design Loads for Buildings and Other Structures**  
American Society of Civil Engineers (ASCE)



## ENGINEERING SOFTWARE



## RAW MATERIALS

- Raw Material origins: Vietnam, China, Korea, UAE, etc.
- Stock: 8,000+ MT on site
- Materials conforming to: ASTM, EN, JIS and other standards
- Please check with our Sales Team for special material requests.



# MACHINERY LIST

## COMPANY OVERVIEW

No.	Machinery List in Hanoi factory	Quantity	No.	Machinery List in Hanoi factory	Quantity	No.	Machinery List in Hanoi factory	Quantity
1	Flange Brace Roll Forming m/c	1	18	Crankpress MC 15tons/70tons	6	36	Press brake machine	1
2	MZ Profile Sheet Roll Forming Machine	1	19	Plate Straight Press MC	2	37	Press machine (hydraulic) Model: WS-110	1
3	Fiber Laser Welding machine LW-1500	1	20	Square Down spout roll forming m/c	1	38	Slitting machine	1
4	Shearing machine 6m: Material Capacity: 20mm plate thickness, 6020mm plate length; Model No.: HACO PSC 6020	1	21	Magnetic drill 220V; Model: AO-3000;AO-3500;AO-5500	8	39	Airless Spray painting machine Model: EXTREME KING 68:1 (2pcs) and Model: EXTREME KING 33:1 (3pcs)	4
5	Shearing Machine 0.6	1	22	PORTABLE AUTOMATIC GAS CUTTER; MODEL: IK-93 HAWK	2	40	Crank Shaft press machine	1
6	Shearing machine Material Capacity: 20mm plate thickness, 6000mm plate length; Model No: QC11Y-20x6000	1	23	PORTA-PUNCH 35 TON Model No.: HS11-1624	3	41	Skit welding DC600 (bay 2)	1
7	Vacuum lifter crane, Cap.5000lbs	2	24	LT-7,Auto-Fillet Welding Machine DC 1000	1	42	Sundry part welding m/c DC600	3
8	Crank press for Slot punching machine Model No. PC-5 (IV)	1	25	Rod bending machine; Model No. BENDHOR-50	1	43	Travel crane	6
9	Movable slot punching machine	2	26	Beam Auto welding machine line Bay 3	1	44	Overhead crane 10MT (7pcs) and 5MT (14pcs)	21
10	Beam straightening machine Model No. LTJ-800	1	27	Beam Auto welding machine line Bay 5	1	45	Jib crane	20
11	Flange line	2	28	Full Weld station (welding m/c DC600)	18	46	Gantry crane	3
12	Flame Planer (FP- 4000E)	2	29	Fitting station (welding m/c DC500)	12	47	Shot blasting machine with accessories	1
13	Punching machine ( Puma 110S)	1	30	Purlin roll former line: DTR	1	48	Air compressor with dryer	3
14	Iron worker machine (Hydracrop 110S)	2	31	Sheeting Panel line – roll forming machine	1	49	Fork lift 5 tons/ 10 tons	2
15	Iron worker machine (Hydracrop 165S)	1	32	Curb panel press brake	2	50	Side loader	1
16	Radial drilling machine (VO 50,60 DIA )	2	33	Panel cutting machine (hydraulic) Type: MCT-0-8x1200	1	51	Machanism container pushing	2
17	Rod threading machine No. FE099 98	2	34	CNC Folding machine - Model No. SL300 MB4001-10 and CNC Folding machine	1	52	Max SEAM roll former	3
			35	JZW800 Digital Control Folder Slitter		53	CNC Drilling Machine FD-1635	1
						54	CNC Plasma Machine	1

No.	Machinery List in Dong Nai factory	Quantity	No.	Machinery List in Dong Nai factory	Quantity	No.	Machinery List in Dong Nai factory	Quantity
1	CNC - laser machine	1	21	Vacuum lifter crane #01	6	41	Seam welding m/c #01	1
2	CNC plate processing machine - ficep	1	22	Over head crane swf 5ton #01	9	42	Seam welding m/c #02	1
3	CNC- high speed plate drilling mc	1	23	Over head crane swf 10ton #01	9	43	Tacking station #01	1
4	Welding saw grantry machine	1	24	Over head crane swf 15ton #01	3	44	Tacking station #02	1
5	Auto shot blasting machine	1	25	Jib crane #01	1	45	Electric fire pump	1
6	CNC angle processing a166t	1	26	Wall crane swf 2 ton #01	18	46	Diesel fire pump	1
7	CNC h beam drilling machine 1050 x650mm,	1	27	Welding mig m/c (lincoln DC400)	40	47	Plangle cutter machine # 01	1
8	CNC - punching machine	2	28	Welding mig m/c (lincoln DC600)	10	48	Plangle cutter machine # 02	1
9	Flange butt welding machine	1	29	Welding stick m/c (lincoln DC405)	24	49	Hydraulic press brake machine	1
10	Electric scissor lift sc124-no	1	30	Submerged arc welding m/c (lincoln dc 1000)	12	50	Plate straight press machine	1
11	Flange punch & shear machine	1	31	Air compressor #01	1	51	CNC beam bandsaw machine	1
12	Line conveyors system of fangle line	1	32	Air compressor #02	1	52	CNC beam drilling machine	1
13	Shear machine No : 01	1	33	Air compressor #03	1	53	Structural robotic coping m/c	1
14	Shear machine No : 02	1	34	Air compressor dryer #01	1	54	CNC plate drilling mc	1
15	Iron works m/c - punch & shear #1	1	35	Air compressor dryer #02	1	55	Shot blasting machine	1
16	Iron works m/c - punch & shear #2	1	36	Air compressor dryer #03	1	56	Amg plate processing machine	1
17	Iron works m/c - punch & shear #3	1	37	Forklift #01komatshu	1	57	Interchangeable purlin roll forming mc	1
18	Rod threading machine #01	1	38	Forklift #02 tcm	1			
19	Rod threading machine #02	1	39	Beam auto welding m/c #01	1			
20	Rod bending machine	1	40	Beam auto welding m/c #02	1			



# QUALITY ASSURANCE

Zamil Steel Buildings Vietnam follows a stringent quality control program at each stage in its manufacturing process.

The company has an independent Quality Control Department, which coordinates with other departments to ensure that:

- Raw materials, consumables, and buyout inventories are received as per defined standards of quality.
- All products are produced in accordance with approved procedures to meet required Quality Level.
- Finished products are stored and shipped in safe and sound condition.

Zamil Steel Buildings Vietnam continuously strives to improve its products and process through statistical monitoring of the internal in-process non-conformances and customer complaints. A team of Inspectors closely watches every activity right from the review of shop drawings to the fabrication, welding, surface preparation, painting and shipping stages of the manufacturing and delivery process.

The inspection procedures are well defined and documented in the Quality Plan, as per the recommendations of ISO 9001. The inspection record is traceable for two years, or a longer period, if requested by the client in a special contract.

Zamil Steel Buildings Vietnam is well equipped with

facilities for in-house testing of steel for Hardness, Ultrasonic (UT), Magnetic Particle Testing (MPT), Liquid Penetrant Testing (PT). Mechanical, Chemical and X-ray tests are subcontracted to several locally present international testing agencies such as IBST, QUATEST 1&3, SGS, APAVE etc.

Zamil Steel Buildings Vietnam QC, UT, MT and PT Inspectors are qualified and trained as per the American Society for Non-Destructive Test Level II, III requirements.

All the welders at Zamil Steel Buildings Vietnam are qualified to perform as per the approved welding procedures with reference to American Welding Society code AWS D1.1.

The QC Department also performs periodic quality audits, in line with ISO 9001 requirements.

1. Checking Incoming Materials
2. Dimension Checking
3. Welding Checking
4. Ultrasonic Testing
5. Magnetic Particle Testing
6. Liquid Penetrant Testing
7. Surface Preparation checking
8. Painting Checking
9. Final checking

Etc....





## ERECTION SITE SUPERVISION



### BUILDINGS ERECTION

Zamil Steel Buildings Vietnam provides complete installation services for our steel constructions and structures.

1. Receiving and analyzing engineering documents
2. Pre-erection checks
3. Container unloading and material delivery procedures at the site and checking materials' quality and quantity
4. Construction of steel buildings consistent with Zamil Steel's international safety and quality standards. The entire process follows our standard Erection Procedures
5. Inspection and testing program
6. Documentation, reports, and handing over to customers
7. Maintenance plan, if required.



### SITE SUPERVISION

Quality control is conducted throughout the various stages of the assembly process, beginning with the receipt inspection until the building is eventually handed over.

A standard ITP/quality plan or a project-specific ITP/quality plan is followed. The quality plan should minimally comprise the following:

1. Inspection and Testing Program
2. Erection Inspection Checklist
3. Method Statement
4. Procedures and Inspection Forms referred to in the ITP
5. Bolt tightening procedure
6. Paint touch-up procedure
7. Site organization chart including a dedicated qualified person for QC and safety
8. Construction does not begin without: The submission of the Quality Plan, appointing a dedicated Quality and Safety Person and conducting a pre-inspection meeting





SAFETY IS EVERYONE'S RESPONSIBILITY

**ONE** TEAM  
GOAL  
**ZERO ACCIDENT**

## ZAMIL STEEL SAFETY OATHS



### WORKING AT HEIGHT

I will only work at height using a harness, if I have been properly trained and I am authorised to do so and will tie off 100% when there is no edge protection, including when loading/unloading vehicles.



### ELECTRICITY

I will only work with electrical supplies if I am trained and authorized to do so, and will follow the requirements of the LOTO (Lock Out & Tag Out) system.



### LIFTING OPERATIONS

I will not enter lifting exclusion zones or walk under slung loads.



### SLIPS AND TRIPS

I will keep my work area free from tripping hazards like waste materials and tools, and I will follow designated pedestrian walkways and access routes.



### PPE

I will wear 5-point PPE at all times, and task specific PPE as required, if damaged or not available I shall report it to my supervisor.



### HOT WORKS & FIRE PREVENTION

I will only carry out hot works if authorized and a valid Hot Work Permit is in place.



### MANUAL HANDLING

I will use mechanical means to move materials where possible, where not I shall consider team lifting, and will always wear gloves when moving material.



### CHEMICAL USE AND STORAGE

I will ensure that I follow the rules for safe use of chemicals, including PPE, and put chemicals back in safe storage after use.



### POWER TOOL USE

I will only use power tools that have been inspected and have all relative parts, handles, guards etc.



### Unsafe acts and Conditions

I shall always report unsafe acts or conditions, near misses or injuries, in my or others work areas to my supervisor



# ENVIRONMENT HEALTH AND SAFETY



# LOGISTICS TRANSPORTATION



Our steel buildings are shipped using two methods: inland transport and sea transport.

- Inland transport is chosen when delivering buildings to destinations within Vietnam and other countries that can be easily reached by trucks
- Sea transport is used mainly for shipping to destinations outside of Vietnam with our building parts shipped in 40 foot-containers. With the convenience of sea transport, our products can reach almost anywhere in the world

We recognize that sea shipments to overseas ports may incur the risk of damage during loading/unloading, so we always strive to reduce the break-bulk shipment while avoiding any inconvenience to customers

Tedious and time- consuming work involved loading and unloading into and from dry containers is no longer an issue thanks to our experience in logistic managements, for which the whole process is handled in a much easier, quicker, economical and damage-free way.





**Pre-engineered steel buildings**



**Structural steel**



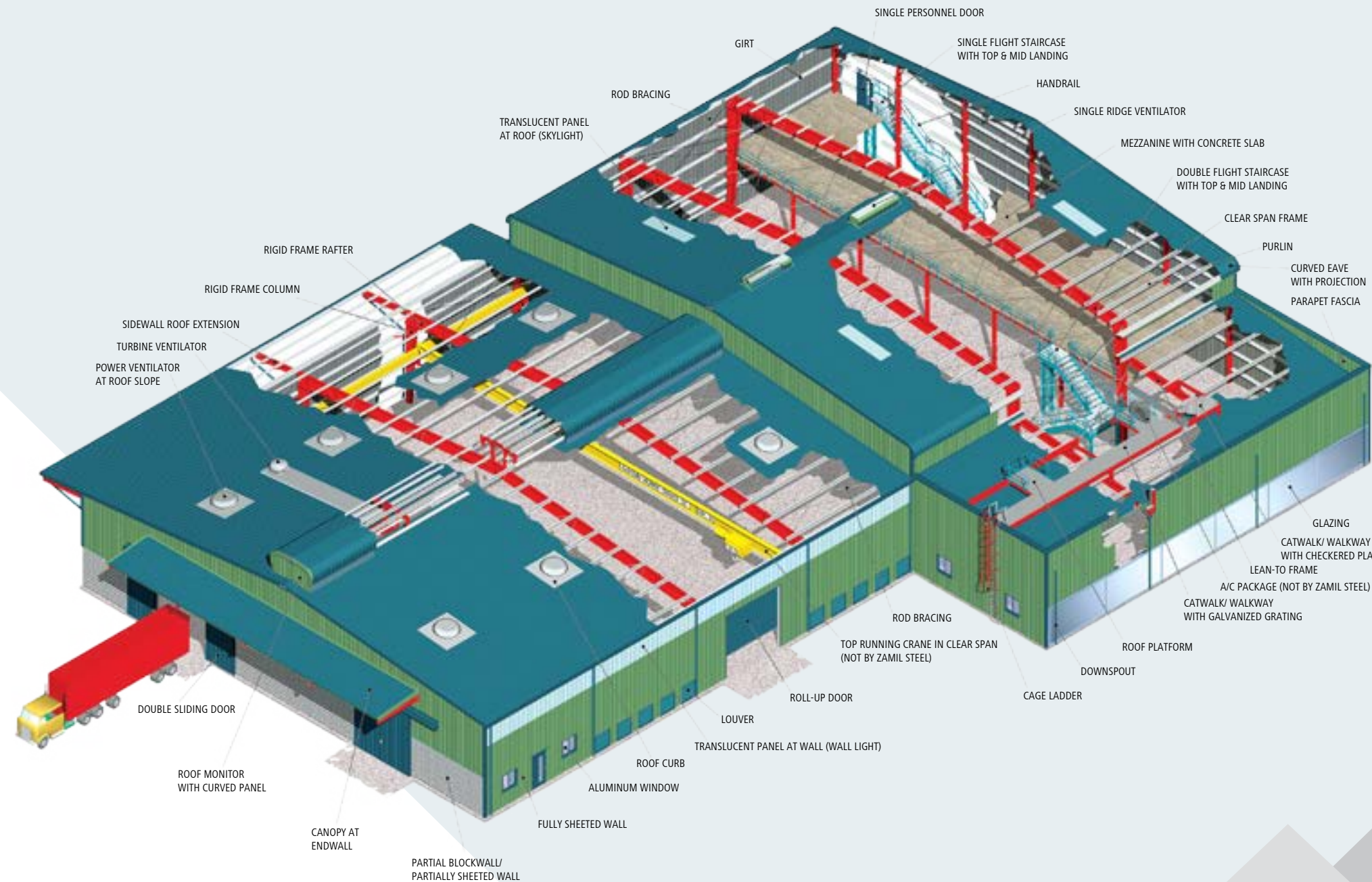
**MaxSEAM® roof system**

# THE PRODUCTS



# THE PRE-ENGINEERED Steel Building (PEB) System

Pre-engineered steel building systems (PEB) are customized steel buildings that are tailor-made to users' architectural and engineering requirements. Maximum cost-effectiveness is achieved by using built-up members that are tapered (varying the web depth) according to local loading effects, thereby saving the material in low-stress areas.





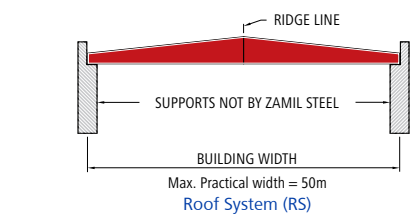
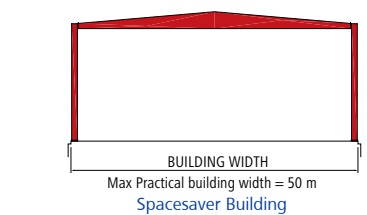
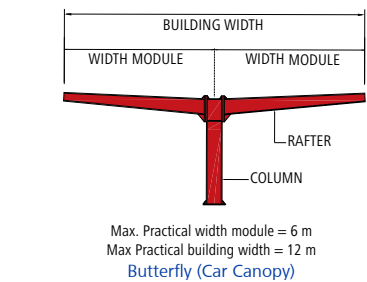
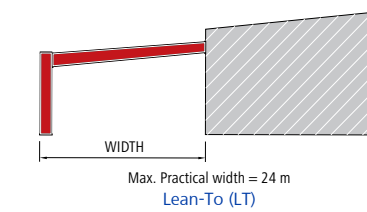
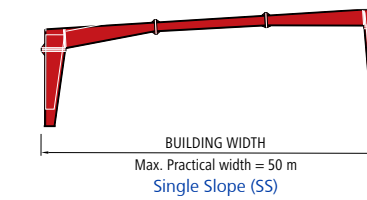
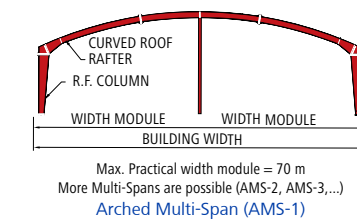
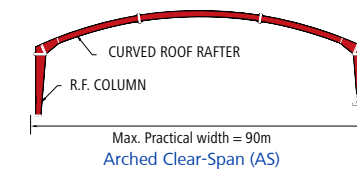
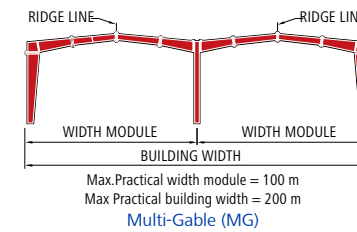
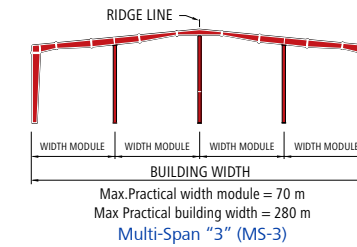
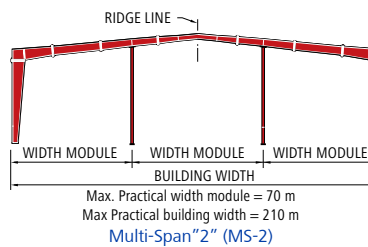
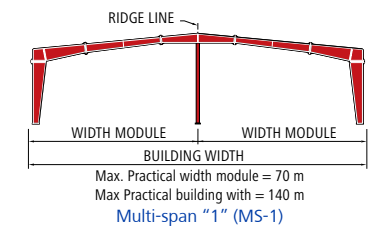
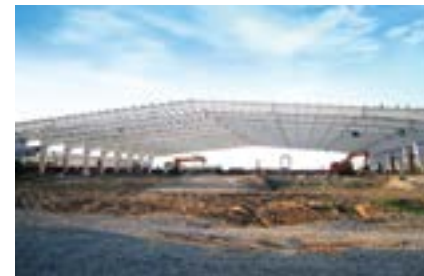
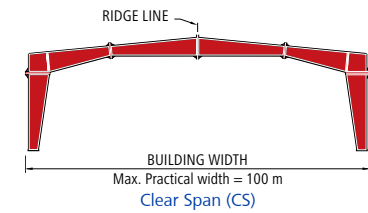
# PRIMARY FRAMING SYSTEMS

In conventional steel buildings, mill-produced hot rolled sections (beams and columns) are used. The size of each member is selected on the basis of its maximum internal stress. Since a hot rolled section has a constant depth, many parts of the member in areas of low internal stress are in excess of design requirements

Frames of pre-engineered steel buildings are made from standard plates stocked by the manufacturers of the buildings. The pre-engineered steel building frames are normally tapered and have flanges and webs of variable thicknesses along the individual members.

The frame geometry matches the shape of the internal stress bending moment diagram, thus optimizing material usage and reducing the total weight of the structure.

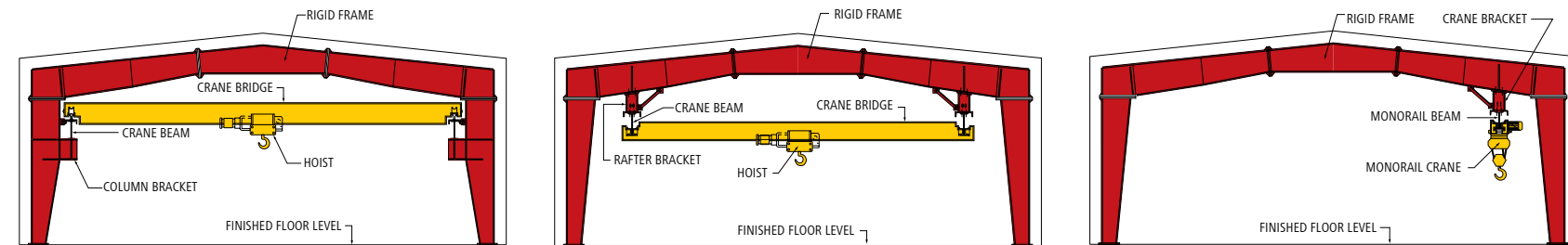
The most common primary framing systems are shown below. Zamil Steel's engineering group will design the proper systems to fit with clients' requirements for building usages.





# CRANE SYSTEMS

For buildings that require crane systems, Zamil Steel designs the supports base on crane capacity and operation detail.



TOP RUNNING CRANE



UNDERHUNG CRANE

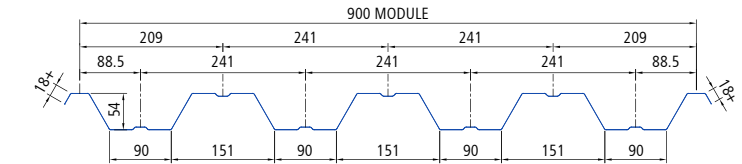


MONORAIL CRANE

# FLOORING SYSTEMS

Floor systems offered by Zamil Steel include flooring, catwalks, walkways, platforms, all their components and subsystems such as grating, checkered plates, staircase, handrails and guardrails.

Flooring system options range from single to multiple levels.

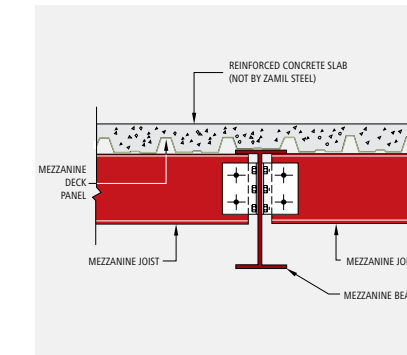


0.7MM THICK - TYPE "K" PROFILE PANEL  
(For mezzanine decking)

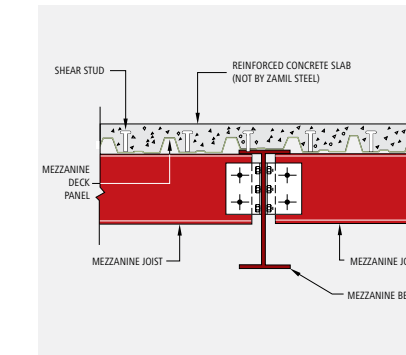


## 1. Concrete floor

Reinforced concrete slab is cast on the metal deck (0.7mm thick) supplied by Zamil Steel.



FLOOR CONNECTION DETAIL WITHOUT SHEAR STUDS



FLOOR CONNECTION DETAIL WITH SHEAR STUDS



NON-COMPOSITE DESIGN WITH STEEL DECK SUPPORT



COMPOSITE DESIGN WITH STEEL DECK AND SHEAR STUD

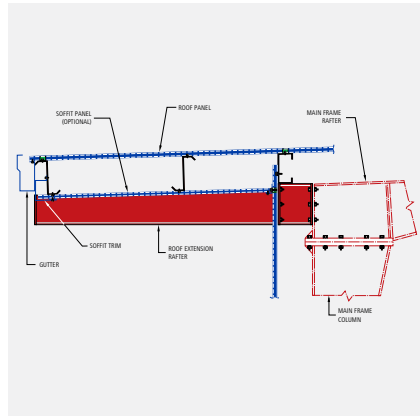




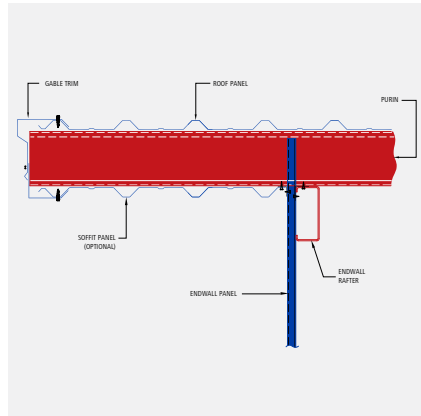


# SUB - STRUCTURAL SYSTEMS

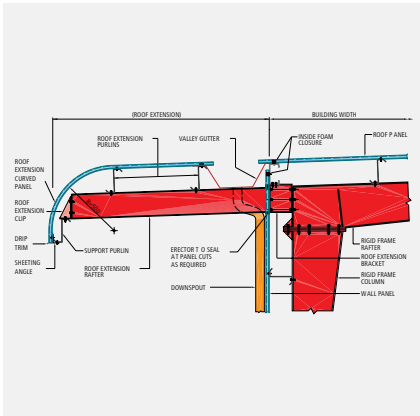
Endwall roof extension



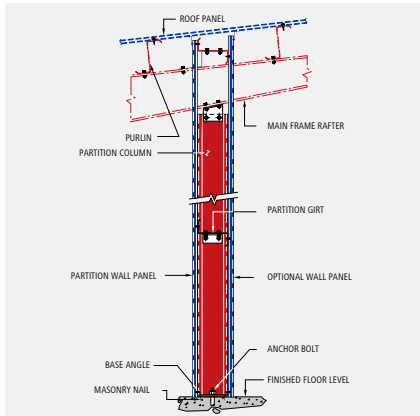
Sidewall roof extension



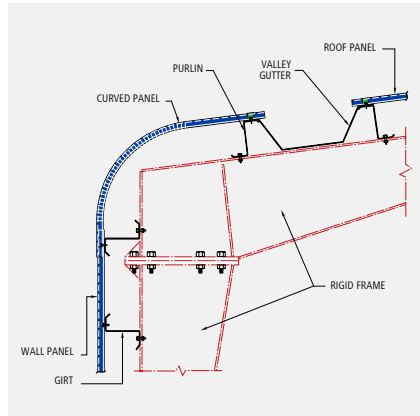
Curved canopy



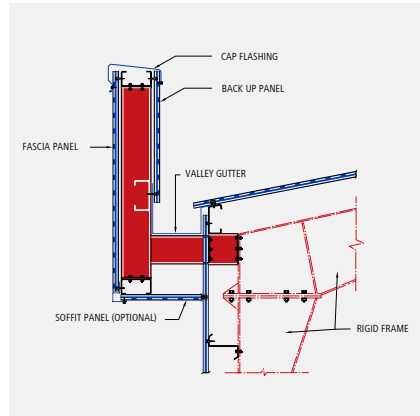
Longitudinal partition



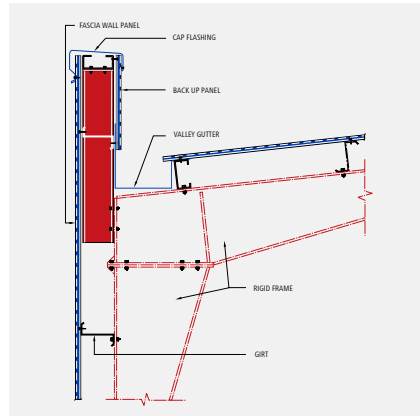
Curved eave without projection (With valley gutter)



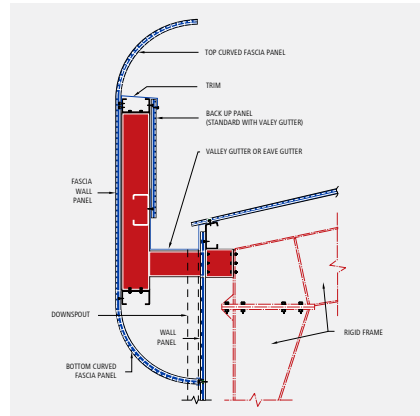
Vertical fascia with back up panel and valley gutter



Parapet Fascia



Top and bottom curved fascia panel





# SECONDARY - BRACING SYSTEMS

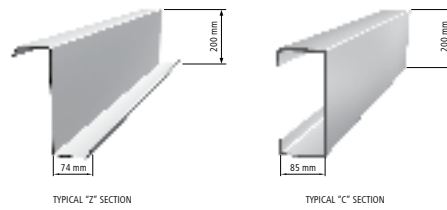
## Secondary Framing System

"Z"-shaped roof purlins and wall girts are used for the secondary framing. They are lighter than the conventional hot rolled "I" - or "C" - shaped sections in conventional steel buildings.

Nesting of the "Z" - shaped members at the frames allows them to act as continuous members along the length of the building. This doubles the strength capacity of the "Z" - shaped members at the laps, where the maximum internal stresses normally occur.

## Secondary Members

Cold-formed from steel coils (available in 1.5mm, 1.75mm, 2.0mm and 2.5mm thickness) conform to AS 1397 G450, Coating Z 275 (or its Equivalent) with zinc coating to Z275 designation (275 g/m<sup>2</sup>).



SECONDARY MEMBERS  
(Minium Yield Strength is 34.0 kN/cm<sup>2</sup>)

## Secondary Framing System

Bracing systems help to utilize materials and improve the flexibility of the designs. These systems are divided into 2 types:

- Bracing rod conform to JIS G3101 SS400 (or equivalent) with an ultimate tensile strength of 40.0 kN/cm<sup>2</sup>
- Bracing cable conform to ASTM A475-03, class A with minimum breaking strength is 119.657kN



CABLE BRACING



ROD BRACING



# BUILDING ACCESSORIES

## Doors and Windows

Based on your requirements, we supply all building accessories such as windows, louvers, sliding doors, roll-up doors, personnel doors, etc.



Aluminum Window



Fixed Louver



Personnel Door



Double Sliding Door



Roll-up Door



Ridge Ventilator



Translucent Panel (Skylight)



Wall Light



Insulation

## Examples of Sundry items

- Anchor Bolts
- Bolts and Nuts
- Mild Steel Bolt
- Hillside Washers
- Coupling Nuts
- Fasteners
- Sealants and Closures



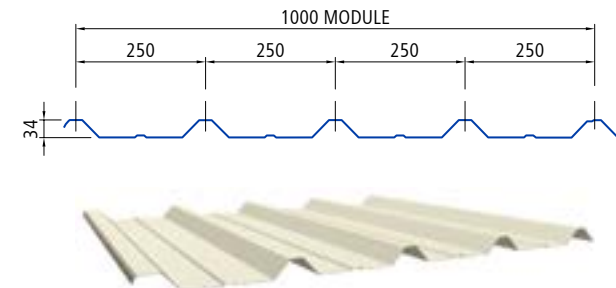


# ROOFING, WALL CLADDINGS AND DRAINAGE SYSTEMS

## Wall cladding and Conventional roofing systems

### Type S panel

- Base metal of Zamil Steel single-skin panels (minimum yield strength of 34.0 kN/cm<sup>2</sup>) coated with zinc (approximately 55%) and aluminum (45%), conforming to ASTM A792M-SS Grade 340 Class 2 (or equivalents).
- An exterior surface or weather-facing coating on painted panels of 5 microns epoxy and 20 microns of high-durability polyester.
- An interior surface coating on painted panels of 5 microns epoxy and 5 to 7 microns of regular polyester.



0.5MM THICK - TYPE "S" PROFILE PANEL  
(For roof and wall application)

### Standard Panel Colors

Actual color may differ slightly from printed examples. Refer to Zamil Steel's "Panel Chart (colors and profiles)" for actual color samples.

Bare Zinalume® steel panels (0.5mm nominal thickness) are available in all standard colors.

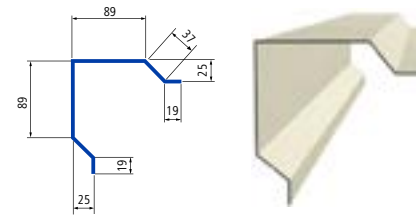
Panels may be specially ordered to any base metal specification, coating, finish, color and thickness. Consult Zamil Steel's representative for price and delivery.

\* Other colors are available upon request (or shall be advised) in advance only.

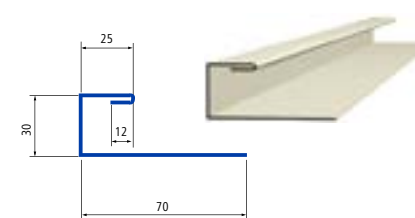


### Trim

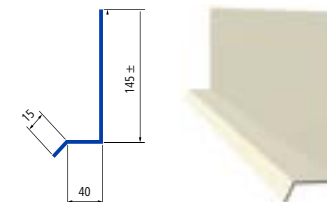
Trims are made of the same material as single-skin panels and are available in all standard panel colors. Shown below are the most common trims used in Zamil Steel pre-engineered steel buildings.



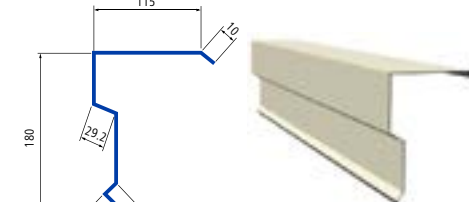
OUTSIDE CORNER TRIM  
(at intersection of endwall and sidewall)



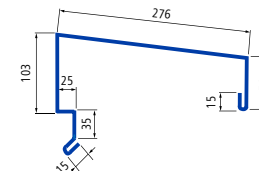
FRAMED OPENING TRIM



DRIP TRIM



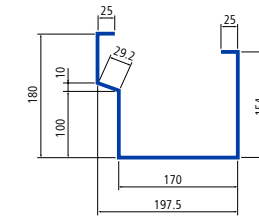
OASIS GABLE TRIM  
(at endwall only)



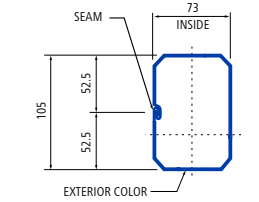
CAP FLASHING

### Drainage System

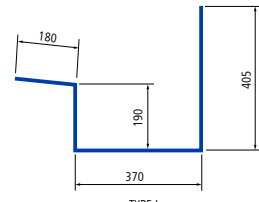
Eave gutters and downspouts are made of the same material as standard single-skin panels and are available in all standard panel colors. Valley gutters are made of plain Zinalume (1.0mm thick).



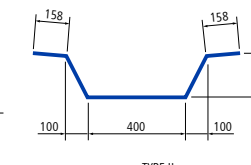
EAVE GUTTER



DOWNSPOUT



TYPE I



TYPE II

VALLEY GUTTER



# INSULATION

In roof installation, one of the challenging factors is thermal flows through unit area of a wall and roof system when temperature difference exists between airs on each side of the structure. To reduce heat gain or loss through the building envelope, Zamil Steel recommends that roofs and wall of pre-engineered steel buildings be insulated with Zamil Steel standard fiberglass insulation.



## Features and Benefit Zamil Steel Standard Fiberglass Insulation

Zamil's standard insulation is, a highly efficient, lightweight, strong, resilient, and easy-to-handle flexible blanket fiberglass insulation. The insulation is composed of fine, stable, and uniformly textured inorganic glass fibers which is bonded together by a non-water soluble and fire-retardant thermosetting resin. Due to its mineral composition, the insulation is free from coarse fibers and shot particles.



# VENTILATOR SYSTEMS

Zamil Steel Buildings Vietnam provides natural ventilator systems for steel buildings, with great ventilation capacity and excellent water leakage prevention.

A ventilator controls the interior environment of the building through reduction and removal of head build-up, gaseous byproducts, and flammable fumes, thus providing a healthier, more comfortable atmosphere for workers, preserving goods and enabling equipment to function properly, and minimizing fire hazards.

Ventilator systems come in two categories: inlet and outlet equipment. The principle of ventilation is shown as below.

Ridge ventilators for Zamil Steel pre-engineered buildings shall be ZRV 300 or ZRV 600 and can be installed as continuous or single units. Both types come in 3000 mm long units with fixed throat openings for gravity air flow.

## Ridge ventilator



## Standard outlet ventilator



## Standard inlet ventilator







# EXAMPLES OF PRE-ENGINEERED STEEL BUILDINGS APPLICATIONS

## THE PRODUCTS



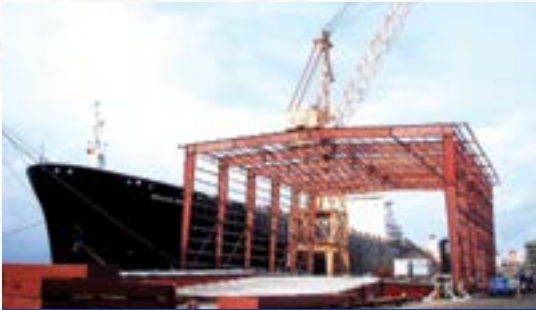
Petrochemical



Electronics



Paper



Ports



Agriculture



Automotive



Hypermarkets, Shopping Malls



Food



Plastic



Schools, Universities



Garment, Textile



Beverage



Aviation



Apartments, Office Buildings



Sport Centers, Sport Halls





# MaxSEAM®

The ultimate weatherproof roof system

The Zamil Steel MaxSEAM® roof system is one of the strongest and most weather-tight standing seam roof systems available in the industry today.

### Features

The product features a 360-degree seam along the side laps of the panels; a special type of sliding clip and a carefully engineered system for improving strength, durability and resistance to weather.

The MaxSEAM® roof system acts as a monolithic membrane that completely protects your building, and is the most recommended roof system for tropical, rainy, snowy or high wind (cyclonic) regions.

Zamil Steel's MaxSEAM® can withstand up to 280km/h windspeed and higher windspeed value can be supported also by using special design.

Using Zamil Steel's Super SEAMER machine, the side laps of adjacent panels are seamed together, creating a 360 degree. double-lock seam, which has machine-applied mastic to ensure a secure, weather tight leak-proof joint. To increase weather-tightness level of this roofing system, the end laps could be eliminated by rolling MaxSEAM® panels on site, using a mobile roll former.

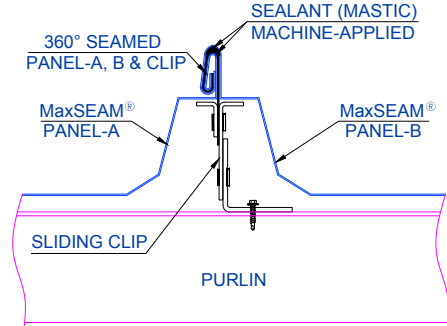
With our mobile roll former, the standard MaxSEAM® panels have a maximum length of 11.5 meters when they are roll formed in-house, while they can reach a length up to 100 meters when rolled on site.



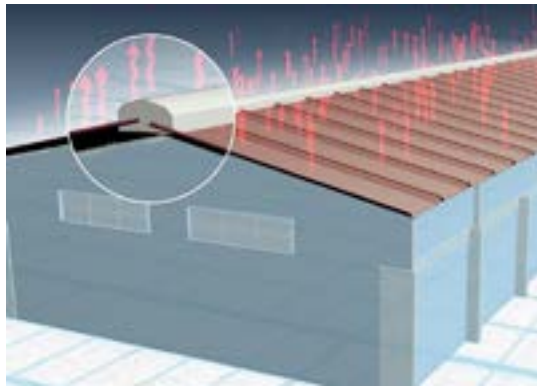
### Benefits

#### • Weather-tightness

MaxSEAM® assures adequate drainage from rain and snow. Designed as a water barrier, the raised seam assists drainage, while the end laps, inside closure, outside closure, tri-bead mastic, along with the machine-applied sealant (inside the seams), increase the lap tightness further.



360° SEAMED WITH CLIP

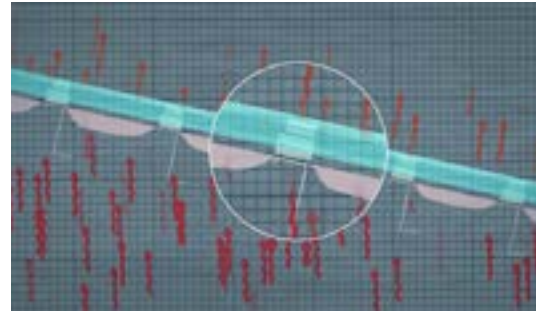


#### • Thermal Movement & Leakage Prevention

The fastening system of MaxSEAM® is designed to handle the potentially damaging effects of thermal movement (especially heat expansion).

The system features a sliding clip which slides between the base components and intermediate components to eliminate binding and offers greater flexibility for durability and thermal movement, while also minimizing the probability of leakage.

Unlike most other SSR systems, the gables at both ends of the roof finish with a 76 mm high standing seam, instead of finishing in the low, flat part of the panel, where the greatest possibilities for leaks occurs.



#### • Cost Effectiveness

The life cycle cost of the MaxSEAM® roof system is lower than any other steel panel roof system. Using Zinalume coated steel, its life expectancy is longer since less maintenance is required.



# MaxSEAM®

**• High-Quality Materials**

MaxSEAM® panels are available in 0.5 mm - 18" panel width Zinalume coated steel. The Panels conform to ASTM A729M Grade 345B and are coated with a protective layer of Zinalume (55% aluminum, 1.6% silicon and 43.4% Zinc) alloy coating (150g/ m<sup>2</sup> on both sides).

The steel panels are available in 0.53 mm (nominal) bare Zinalume or 0.56 mm (nominal) – 24" panel width, exterior roofing and walling (XRW) pre-painted Zinalume. Please refer to Zamil Steel sales representatives for availability of non-standard colors and non-standard coating systems (Exterior Premium Durability - XPD or Polyvinyl Fluoride- PVF2). We can provide you different options for:

- 1. Sketch of panels
- 2. Physical properties
- 3. Load tables
- 4. Material specifications



**• Convenient Installation**

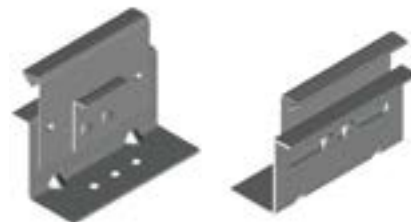
Using the Zamil Steel SuperSEAMER, the side laps of adjacent panels are seamed together through a mechanical action, creating a 360 deg. double lock seam, which has a machine applied mastic to ensure a secure and weather tight leak proof roofing system.



# MaxSEAM®

**• Sliding Clip**

The sliding clip consists of a single component steel base that interlocks with two components in the sliding steel tab. The tab is attached to the base with two rivets and slides along a slot in the clip base.

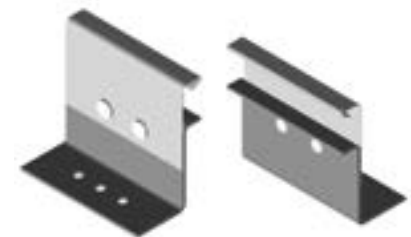


SLIDING CLIP

**• Fixed Clip**

Zamil Steel's MaxSEAM® distinguishes itself from the many types of standing seam roof systems available in the industry. The strong MaxSEAM® clip is made from high-grade steel and has a long, sliding steel tab, which will be seamed with the MaxSEAM® panel.

Fixed clip is also available for the fixed side of the roof system and/or subject to guideline requirements.



FIXED CLIP

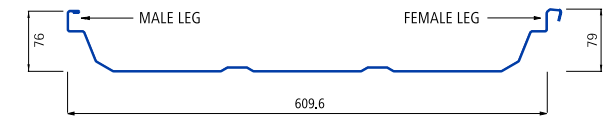
**• Specifications and Properties**

MaxSEAM® panels conform to ASTM A792M SS Grade 340 Class 2 (or equivalent) and are coated with a protective layer of Zinalume (AZM 150). The MaxSEAM® steel panels are available with 18 inches, (457.2mm) wide profiles. The panels, at 18 inches (457.2mm) wide, are available in 0.50mm-thick (nominal) bare Zinalume or 0.53mm-thick (nominal) ZSP pre-painted Zinalume.

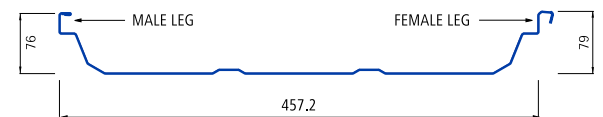


Please refer to Zamil Steel representative for extended deliveries on non-standard colors; non-standard coating systems (ZPF or PVF2) or non-standard thickness or 24 inch (609.6mm) MaxSEAM® panel.

**• Section Properties**



MaxSEAM® panel Cross – 24inch (609.6mm)

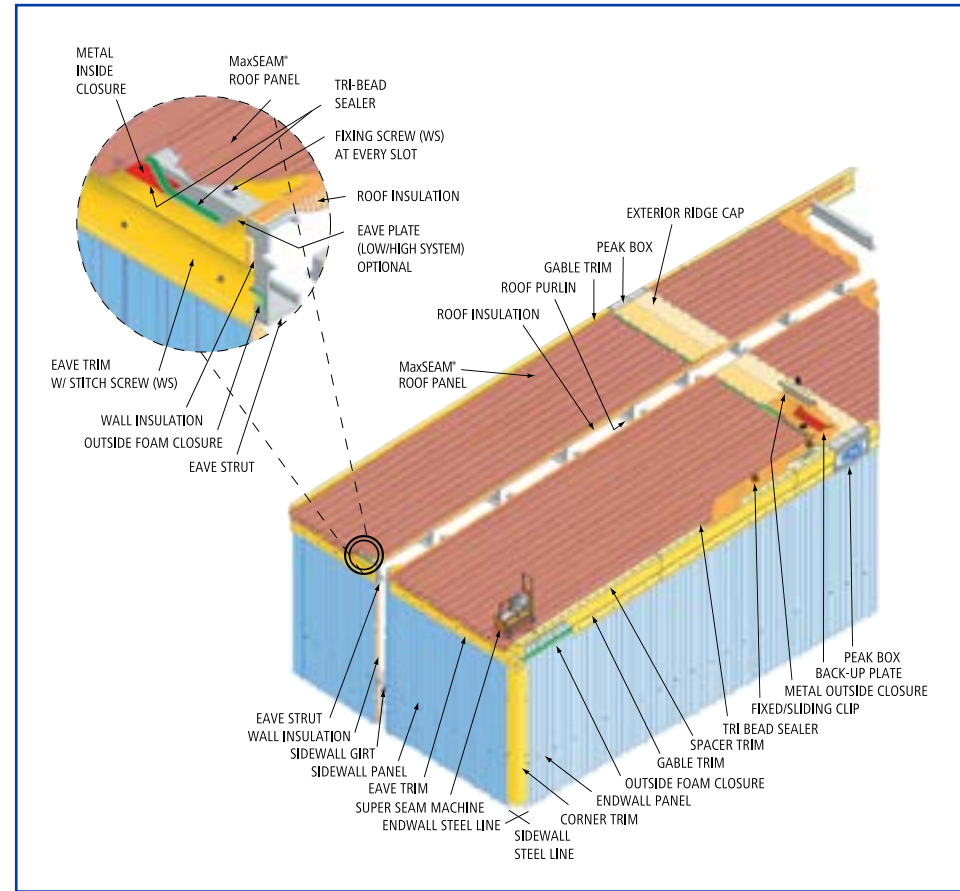


MaxSEAM® panel Cross – 18inch (457.2mm)



# MaxSEAM®

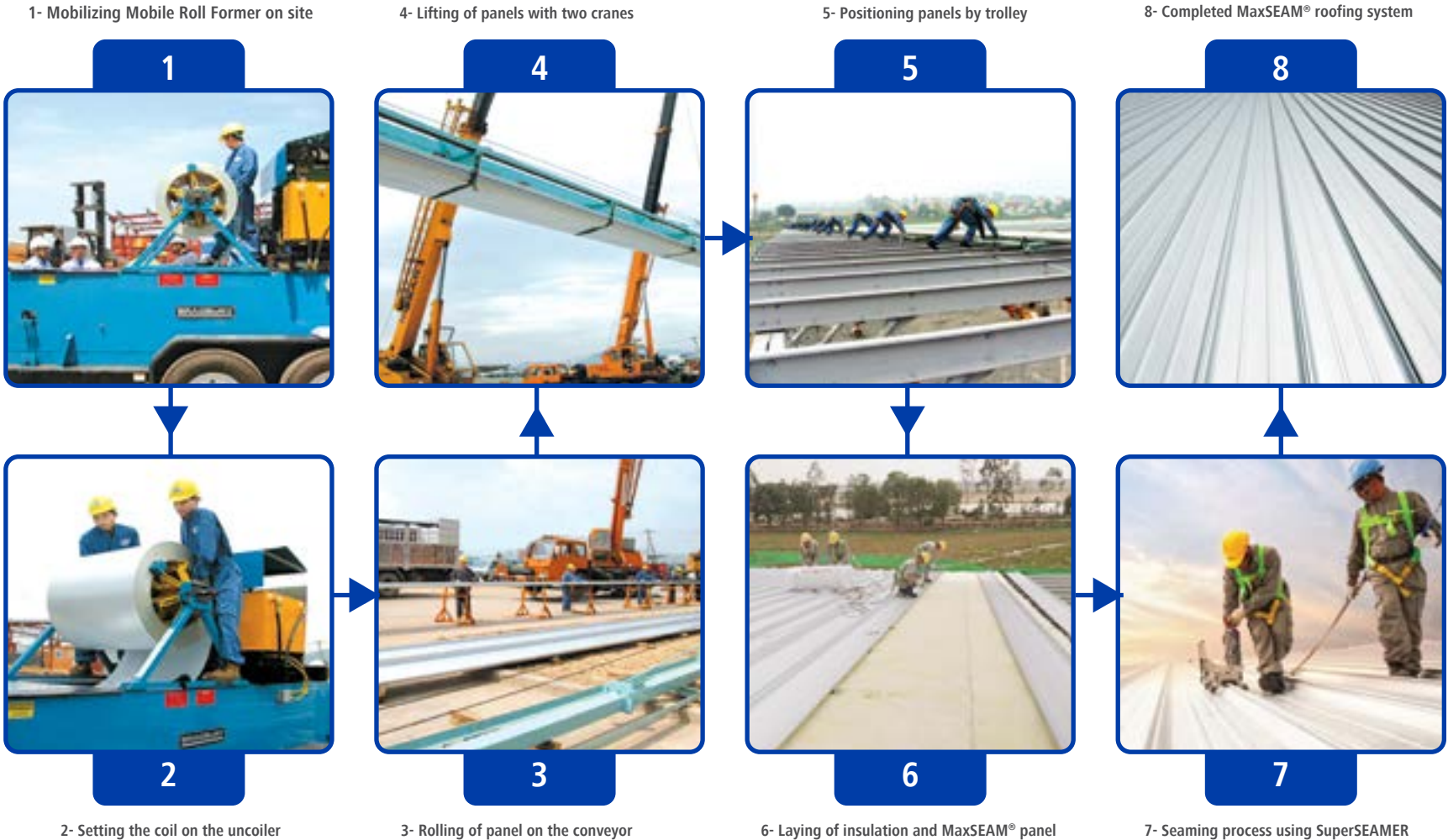
• MaxSEAM® system details



• MaxSEAM® Accessories



# MaxSEAM® ERECTION PROCEDURES





# STRUCTURAL STEEL

Beside pre-engineered steel buildings, structural steel is another solution that Zamil Steel offers to clients with diverse requirements for large-scale and complex projects.

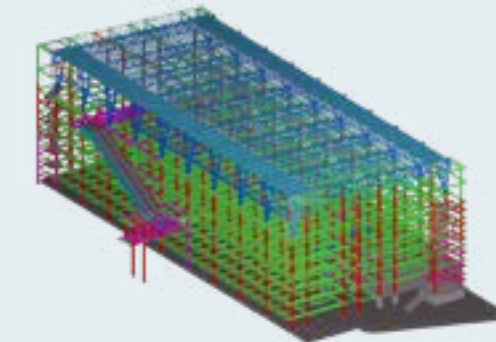
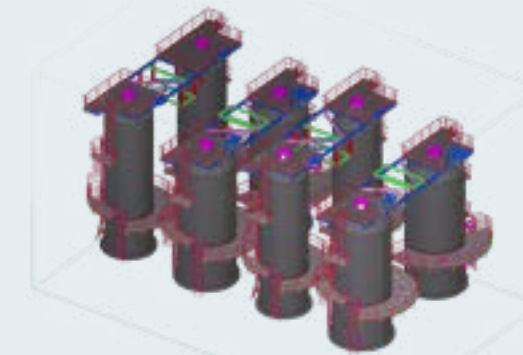
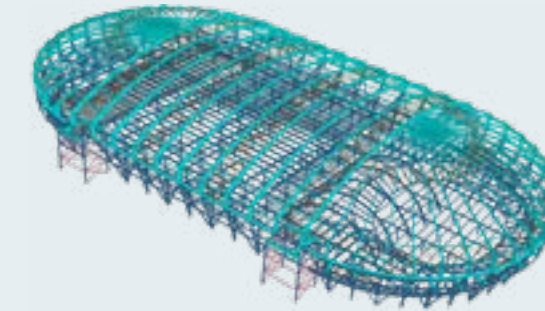
Our structural steel fabrication process is controlled by state-of-the-art computer numerically controlled (CNC) machines and equipment, utilizing the latest engineering software for detailing and connection design.

## APPLICATION

- High-rise Buildings
- Airport Terminals
- Sport & Conference Halls
- Industrial Buildings, Power Plants, Refineries, Petrochemical Plants
- Large scale industrial & commercial complexes



## THE PRODUCTS





# THE ZAMIL STEEL STRUCTURAL STEEL CERTIFIED AND SYSTEMATIC PROCESS



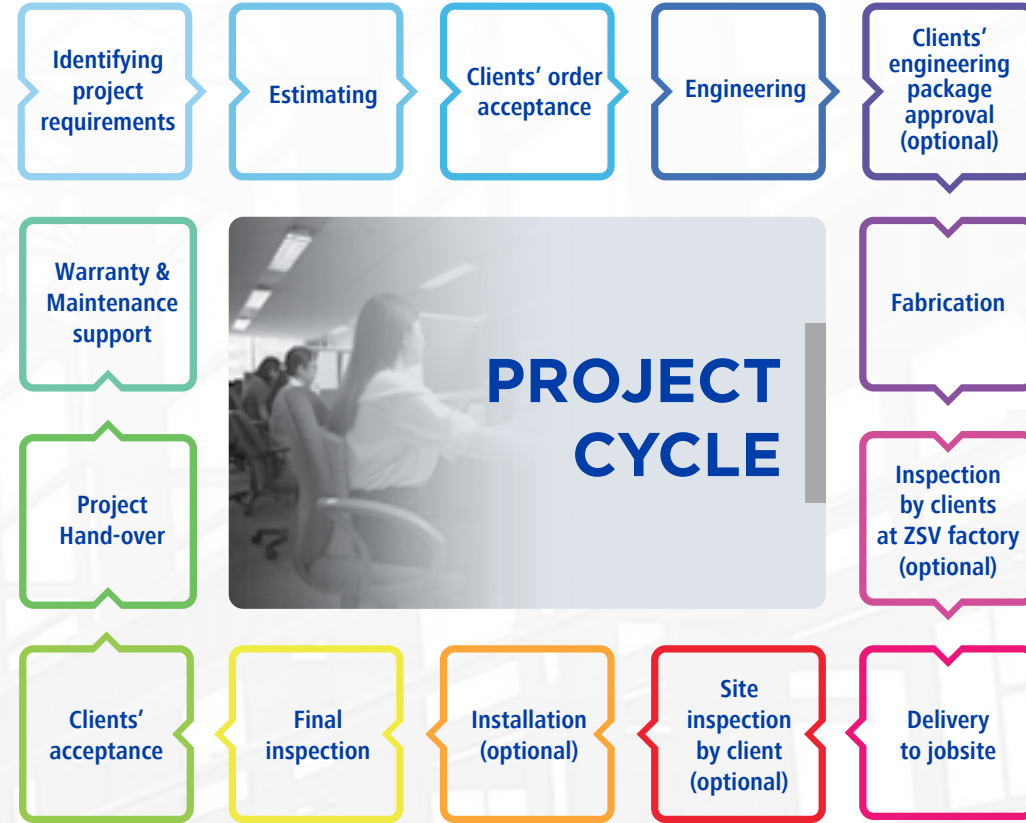




# WHY ZAMIL STEEL



- Complete project solution package
- Global presence and local service
- Reliable after sales service
- Comprehensive and detailed engineering output
- Attention to details
- Over 47 years of experience
- Faster cycle times
- Value-engineered solutions
- Continuous product improvement
- Stringent quality systems





# MAJOR PROJECTS





# LARGE SCALE INDUSTRIAL COMPLEXES



**STEEL PLANT**

Location: Bangladesh  
Weight: 25,000 MT

- Mega scale project utilizing varieties of large/oversized members
- Laced columns with the largest ones weighted up to 43MT
- Special, heavy cranes with long spans
- Break bulk shipment for oversized structures



**REFINERY AND PETROCHEMICAL COMPLEX**

Location: Malaysia  
Weight: 22,263 MT

The scope of the contract Includes the design, fabrication and supply of pipe racks and structural steel platforms, as well as the fabrication and supply of pre-engineered steel shelters for the Refinery and Petrochemical Integrated Development (RAPID) complex project, located in Pengerang in southeast Johor, Malaysia.



**THERMAL POWER PLANT**

Location: Philippines  
Weight: 4,500 MT

Thermal Power Plant in the Philippines utilizing structural steel solution by Zamil Steel



**STEEL PLANT**

Location: Vietnam  
Weight: 4,560 MT

- Six heavy crane beams (ranging from 14 - 29 MT) were installed for this project.
- This is also one of the largest steel plants in Vietnam with the expected annual capacity of 3.5 millions ton/ year for billet and 2.5 millions ton/year for rolled steel when the whole project's put into full operation.





# LARGE SCALE INDUSTRIAL COMPLEXES



**STAINLESS STEEL PLANT**  
Location: Malaysia • Weight: 14,000 MT



**HANDLING CONVEYOR & BOILER SYSTEM**  
Location: Vietnam • Weight: 7,000 MT



**CHEMICAL PLANT**  
Location: Bangladesh • Weight: 6,000 MT



**MINING PROCESSING PLANT**  
Location: Vietnam • Weight: 2,166MT



**CHEMICALS AND REFINERY INTEGRATED PROJECT**  
Location: Singapore • Weight: 4,309 MT

## MAJOR PROJECTS



**PIPE RACK STRUCTURE**  
Location: Singapore • Weight: 2,014 MT



**SMELTER STORAGE SHELTERS**  
Location: Indonesia • Weight: 2,900 MT



**CYCLE POWER PLANT**  
Location: Malaysia • Weight: 3,329 MT



# FACTORIES - WAREHOUSES



**HAYAT KIMYA HYGIENE PRODUCT PLANTS**

Location: Vietnam  
Weight: 4,000 MT

The project spreads over an area of nearly 50,000 square meters utilizing 3 layer roof system with insulation specially imported from Turkey.

The MaxSEAM panels for the roof reach 120 meter in length.



**LOGISTICS WAREHOUSE**

Location: Vietnam  
Weight: 1,000 MT

The project spreads over an area of nearly 30,000 square meters utilizing nearly 1,000 MT of steel structure.



**FACTORY IN BATAM ISLAND, INDONESIA**

Utilizing more than 7,000 MT of steel structures with very high requirements for material standards. The facility is dedicated to the production of large mining truck chassis and bodies for shipment to mining customers throughout the Asia Pacific region. Client has invested a total of \$150 million on the facility, which is located on Batam Island, Indonesia .



**ELECTRIC CAR BATTERY PLANT**

Location: Vietnam  
Weight: 6,000 MT

The project includes 01 main building and multiple utility buildings utilizing MaxSEAM roof systems & sandwich panels.

It requires fast-track solutions to complete the fabrication and construction works within a strict three-month timeline.



# FACTORIES WAREHOUSES



**ELECTRONICS FACTORY**  
Location: Vietnam



**POWER PLANT**  
Location: Srilanka



**RICE MILL PLANT**  
Location: Philippines



**SUGAR MILL**  
Location: Mauritius



**GARMENT & TEXTILE FACTORY**  
Location: Vietnam



**LEATHER WAREHOUSE**  
Location: Singapore



**BEVERAGE PLANT**  
Location: Vietnam



**GOLD PLANT**  
Location: Mongolia



# STADIUMS, AIRPORTS AND INSTITUTIONAL BUILDINGS



**COLEGIO DE SAN AGUSTIN STADIUM**

Location: Philippines

Weight: 1,200 MT

The project was designed with curved roof system, spreading over an area of 41,000 m<sup>2</sup> and utilizing 100m clear span. Numerous effort was put into design & detailing calculation to reduce frame deflection and to avoid structural damage during installation.



**SIAM REAP INTERNATIONAL AIRPORT**

Location: Cambodia

Weight: 850 MT

**SHOPPING MALL**

Location: Cambodia

Weight: 781 MT



- The structures are the main frames of a cinema hall located on top of the 5th floor of a shopping mall complex.
- The frames utilize trusses which consist of multiple 9-meter modules using 219mm pipes.
- In some other parts (like the outdoor tower), hollow sections (with pipes dimensioned no more than 219mm) are used to enhance its grandiose features.

**The "ĐỒ" theatre**

Location: Vietnam

Weight: 270 MT



The "ĐỒ" Theatre, located in Nha Trang, Vietnam, is the main attraction of the Vega City Resort - Entertainment - Art complex. It was built in commemoration of the 370th Anniversary of Khanh Hoa province and boasts of a unique design inspired by traditional Vietnamese fishing gear called "chiếc đồ". The design, fabrication, and construction of the exposed steel structure that encases the theatre were carried out by Zamil Steel Vietnam. The circular hollow sections used in the structure resemble the fishing gear and were hot-dip galvanized and painted with glossy finishes to protect and enhance their aesthetics.



# STADIUMS, AIRPORTS AND INSTITUTIONAL BUILDINGS



SHOPPING MALL  
Location: Saudi Arabia



SPORT COMPLEX  
Location: Philippines



EXHIBITION CENTER  
Location: Vietnam



MUTI-STORIED SHELTERS  
Location: Bangladesh



PHNOM PENH INTERNATIONAL AIRPORT  
Location: Cambodia



FORMULA ONE PIT BUILDING  
Location: Vietnam



MIXED-USED COMMERCIAL BUILDING  
Location: Philippines



AIRSHOW EXHIBITION CENTRE  
Location: Singapore



# HIGHRISE BUILDINGS



**AL ZAMIL HOUSE**  
Location: Al Khobar, Saudi Arabia



**NORTH PARK BUILDING**  
Location: Dhahran, Saudi Arabia



**HILTON HOTEL JEDDAH**  
Location: Jeddah, Saudi Arabia



**AL ZAMIL TOWER**  
Location: Bahrain



**KING ABDUL AZIZ CENTRE FOR WORLD CULTURE**  
Location: Dharan, Saudi Arabia



**OFFICE BUILDING**  
Location: Yangon, Myanmar



**HOTEL BUILDING**  
Location: Philippines



**MARKETING CENTER**  
Location: Hanoi, Vietnam



# OTHER APPLICATIONS



“

At Zamil Steel, we aim not only to obtain your current business but to make you a lifetime partner of ours. We make sure that your business interests are perceived by our people, at all levels, to be as important to us as they are to you. Our goal is to earn your trust, your confidence and all your future business. We invite you to work with us

*(Zamil Steel Founders)*





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### Hanoi Factory

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### Dong Nai Factory

Amata Industrial Park, Bien Hoa City, Dong Nai Province, Vietnam

### Representatives Offices & Subsidiaries

Vietnam • Thailand • Philippines • Myanmar • Malaysia • Laos • Indonesia • Cambodia • Bangladesh

### Other Factories

Saudi Arabia • Egypt • India • United Arab Emirates

As of April 2024



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